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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,411	04/19/2004	Tsuyoshi Maeda	119275	9894
25944	7590	09/28/2006		
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			EXAMINER DUONG, THOI V	
			ART UNIT 2871	PAPER NUMBER

DATE MAILED: 09/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/826,411

Applicant(s)

MAEDA, TSUYOSHI

Examiner

Thoi V. Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,5 and 7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,5 and 7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 13, 2006 has been entered.

Accordingly, claim 1 was amended and claims 2, 3 and 6 were cancelled. Currently, claims 1, 4, 5 and 7 are pending in this application.

Response to Arguments

2. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko et al. (Kaneko, US 2003/0038904 A1) in view of Ogishima et al. (Ogishima, US 6,788,375 B2).

Re claim 1, as shown in Figs. 1, 2 and 4, Ogishima discloses a transflective liquid crystal display including a plurality of dots, each dot having a reflective display area R and a transmissive display area, the reflective display area and the transmissive display area of each dot being separate and independent from each other, the transflective liquid crystal display comprising:

- an element substrate 2a having a pixel electrode 14a (paragraph 73);

- an opposite substrate 2b facing the element substrate 2a; the opposite substrate including an opposing electrode 14b opposing the pixel electrode 14a (paragraph 74);

- a liquid crystal layer L disposed between the pixel electrode 14a and the opposing electrode 14b of the two substrates;

- a switching element TFD 33 connected to the pixel electrode 14a (Fig. 4), the switching element generating an electric field that causes an alignment disorder of liquid crystal molecules in the liquid crystal layer; and

- a transflective layer 11 comprising a reflective layer provided in the reflective display area of the opposite substrate 2b and in a non-overlapping condition with the transmissive display area in plan view since the transflective layer has an opening for passing the light through (paragraphs 74 and 77), the reflective layer having a light-shielding portion 11a extending directly below the switching element (paragraphs 85 and 86). Accordingly, it is obvious that the switching element TFD 33 generates an electric field that causes an alignment disorder of liquid crystal molecules in the liquid crystal layer L and the light-shielding portion 11a shields the alignment disorder of the liquid crystal layer from being viewed during transmission display (paragraph 87).

However, Kaneko does not disclose a liquid crystal having negative dielectric anisotropy; an adjusting layer provided at least in the reflective display area, the adjusting layer making a thickness of the liquid crystal layer thicker in the transmissive display area than in the reflective display area, the adjusting layer including a slope in a vicinity of a boundary between the transmissive display area and the reflective display area; and at least one of a slit, opening, and ridge that control the direction in which the liquid crystal molecules of the liquid crystal layer tilt, the at least one of a slit, opening, and ridge being provided in overlap in plan view with both the slope of the adjusting layer and the edge of the reflective layer.

As shown in Figs. 31, 52 and 53, Ogishima discloses a transfective liquid crystal display comprising:

- a reflective display area R and a transmissive display area T;

- a liquid crystal layer 330 having negative dielectric anisotropy (col. 4, lines 16-23);

- an adjusting layer provided at least in the reflective display area R comprising a reflective electrode 312r as shown in Fig. 31, the adjusting layer making a thickness of the liquid crystal layer 330 thicker in the transmissive display area T than in the reflective display area R (col. 3, lines 56-64), the adjusting layer including a slope in a vicinity of a boundary between the transmissive display area T and the reflective display area R; and

- a ridge 326' that control the direction in which the liquid crystal molecules of the liquid crystal layer tilt, the ridge 326' being provided in overlap in plan view with both the

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slope of the adjusting layer and the edge of the reflective layer as shown in Figs. 52 and 53A (col. 4, lines 16-54).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the transfective liquid crystal display of Kaneko with the teaching of Ogishima by employing a liquid crystal having negative dielectric anisotropy and forming an adjusting layer provided at least in the reflective display area, the adjusting layer making a thickness of the liquid crystal layer thicker in the transmissive display area than in the reflective display area, the adjusting layer including a slope in a vicinity of a boundary between the transmissive display area and the reflective display area, and at least one of a slit, opening, and ridge that control the direction in which the liquid crystal molecules of the liquid crystal layer tilt, the at least one of a slit, opening, and ridge being provided in overlap in plan view with both the slope of the adjusting layer and the edge of the reflective layer in order to obtain a display having a wide viewing angle characteristic and high display quality (col. 2, lines 5-9).

Accordingly, with the modification, it is obvious that the shielding portion extends beneath the slope of the adjusting layer and to an edge of the slope of the adjusting layer that borders the transmissive display area shown in Fig. 31 of Ogishima since the shielding portion of Kaneko shown in Fig. 2 covers almost all over the surface of the substrate 2b (paragraphs 86 and 87).

Re claim 5, Kaneko discloses that the switching element TFD 33 is a nonlinear diode element (page 5, paragraph 67).

Re claim 7, as shown in Fig. 8, Kaneko discloses that an electronic device 40 includes the liquid crystal display of Kaneko (page 7, paragraphs 99 and 100).

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko et al. (Kaneko, US 2003/0038904 A1) in view of Ogishima et al. (Ogishima, US 6,788,375 B2) as applied to claims 1, 5 and 7 above, and further in view of Okamoto et al. (Okamoto, US 6,281,952 B1).

The transflective liquid crystal display of Kaneko as modified in view of Ogishima above includes all that is recited in claim 4 except for a circularly polarized light inputting device that inputs circularly polarized light to the element substrate and the opposite substrate.

As shown in Fig. 4, Okamoto discloses a transflective liquid crystal display comprising a liquid crystal having a circularly polarized light inputting device 16 and 17 (phase difference compensation plates) that inputs circularly polarized light into the liquid crystal layer 1 (col. 31, line 44 through col. 33, line 38).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the transflective LCD of Kaneko with the teaching of Okamoto by employing a circularly polarized light inputting device that inputs circularly polarized light to the element substrate and the opposite substrate in order to attain satisfactory brightness and contrast ratio in a reliable manner with respect to light having more than one wavelength in the range of visible light (col. 31, lines 44-49).

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms, can be reached at (571) 272-1787.

Thoi V. Duong

A handwritten signature in black ink, appearing to read 'Thoi V. Duong', written in a cursive style.

09/26/2006